

AMENDMENTS TO THE CLAIMS

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1. (Currently Amended): A laser, comprising:

a laser cavity having

a first lasing chamber,

a second lasing chamber,

trivalent titanium ions dissolved in a liquid host within said first lasing chamber,

trivalent titanium ions dissolved in a liquid host within said second lasing chamber,

E1 a first semiconductor pumping device operatively connected to said first lasing chamber for optically exciting said trivalent titanium ions dissolved in said liquid host within said first lasing chamber, said first semiconductor pumping device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions dissolved in said liquid host within said first lasing chamber,

a second semiconductor pumping device operatively connected to said second lasing chamber for optically exciting said trivalent titanium ions dissolved in said liquid host within said second lasing chamber, said second semiconductor pumping device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions dissolved in said liquid host within said second lasing chamber,

a closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host through said first lasing chamber in a first linear direction into said closed loop circulation system and into said second lasing chamber and through said second lasing chamber in a second linear direction

into said closed loop circulation system and back into said first lasing chamber,  
said second linear direction being opposite to said first linear direction, said  
closed loop circulation system comprising

a first portion for circulating said trivalent titanium ions dissolved in a  
liquid host into and out of said first lasing chamber in a said first linear direction  
and

a second portion for circulating said trivalent titanium ions dissolved in a  
liquid host into and out of said second lasing chamber in a said second direction  
that is opposite to said first linear direction.

Claim 2. (Cancelled)

Claim 3. (Currently Amended): The laser of claim 1 wherein said ~~first~~  
closed loop circulation system for circulating said trivalent titanium ions  
dissolved in a liquid host includes a pump and a heat exchanger.

E'  
cont'd

Claim 4. (Currently Amended): The laser of claim 1, wherein thermally  
induced optical phase errors are produced by said a closed loop circulation  
system for circulating said trivalent titanium ions dissolved in a liquid host and  
wherein said first portion for circulating said trivalent titanium ions dissolved in  
a liquid host into and out of said lasing chamber in a first direction and said  
second portion for circulating said trivalent titanium ions dissolved in a liquid  
host into and out said lasing chamber in a second direction that is opposite to  
said first direction provides a system for correcting said thermally induced  
optical phase errors.

Claim 5. (Currently Amended): The laser system of claim 4, wherein  
said first portion for circulating said trivalent titanium ions dissolved in a liquid  
host includes a first flow channel and said second portion for circulating said  
trivalent titanium ions dissolved in a liquid host includes a second flow channel,

said first flow channel and said second flow channel being of substantially equal length.

Claim 6. (Cancelled)

Claim 7. (Cancelled)

Claim 8. (Cancelled)

Claim 9. (Currently Amended): A laser system, comprising:

an optical cavity having

a first lasing chamber and

a second lasing chamber,

a lasing liquid containing trivalent titanium ions dissolved in a liquid host within said ~~optical cavity~~ first lasing chamber and said second lasing chamber,

E' cont'd  
a first semiconductor pumping device operatively connected to said ~~optical cavity~~ first lasing chamber for optically exciting said trivalent titanium ions dissolved in a liquid host within said ~~optical cavity~~ first lasing chamber, said first semiconductor pumping device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions in the 800 to 900 nm region,

a second semiconductor pumping device operatively connected to said ~~optical cavity~~ second lasing chamber for optically exciting said trivalent titanium ions dissolved in a liquid host within said ~~optical cavity~~ second lasing chamber, said second semiconductor pumping device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions in the 800 to 900 nm region,

a closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host, said closed loop circulation system comprising

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contd

a first portion for circulating said lasing liquid containing trivalent titanium ions dissolved in a liquid host into and out of said ~~optical cavity~~ first lasing chamber in a first direction, and

a second-portion for circulating said lasing liquid containing trivalent titanium ions dissolved in a liquid host into and out of said ~~optical cavity~~ second lasing chamber in a second direction that is opposite to said first direction, said closed loop circulation system including a pump and a heat exchanger.

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